

**UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

LJM PARTNERS, LTD.,
Plaintiff,

v.

JOHN DOES,
Defendants

and

TWO ROADS SHARED TRUST,
Plaintiff,

v.

JOHN DOES,
Defendants.

No. 19 CV 0368

and

No. 20 CV 00831

Judge Manish S. Shah.

**MOTION TO IDENTIFY ANONYMOUS DOE DEFENDANTS BY PLAINTIFFS LJM
PARTNERS, LTD. AND TWO ROADS SHARED TRUST**

Plaintiffs LJM Partners and Two Roads Shared Trust have identified the five market-makers responsible for the manipulative SPX Option quoting on February 5 and 6, 2018 detailed in Plaintiffs' complaints. Cboe's production of SPX Option data to Plaintiffs uses anonymized aliases and lists those Doe Defendants as Firms 4, 5, 8, 12 and 16. Pursuant to the "three-step process for identifying ... Doe Defendants" approved by this Court's April 21, 2020 and June 3, 2020 Orders (Dkts. 311 and 327),¹ Plaintiffs ask the Court to order Cboe to unmask these five firms.

¹ References to "Dkt." are to the docket of *In Re: Chicago Board Options Exchange Volatility Index Manipulation Antitrust Litig.*, No. 18 CV 4171, MDL No. 2842, unless stated otherwise.

Plaintiffs' unmasking request seeks only to identify the "'who' and not the 'what' or 'how' of the claims." Dkt. 311 at 4. Plaintiffs' complaints establish the "what": on February 5 and 6, 2018, the Doe Defendants posted sham quotes on SPX Option strikes to manipulate estimates of the S&P 500's implied volatility, including Cboe's intraday Volatility Index ("VIX"), to benefit their long volatility strategies. *Two Roads Shared Trust v. John Does*, 20 CV 0831, Dkt. 1 ("Two Roads Complaint"), ¶¶10-11, 17-20, 32-34 90, 118-34; *LJM Partners, Ltd. v. John Does*, 19 CV 0368, Dkt. 1 ("LJM Complaint"), ¶¶12-14, 26-28, 99, 125-39.²

The "how" is equally clear: Doe Defendants repeatedly posted and immediately canceled SPX Option quotations on out-of-the-money put and call strikes in a matter of milliseconds, before market participants could trade on them, but after these quotes may have been incorporated into market participants' estimates of implied volatility, including the VIX calculation. *Two Roads*, ¶¶17-18, 90; *LJM*, ¶¶99, 157. This is known as "flashing." These flashing quotes were unrelated to any legitimate positions Doe Defendants held or wished to hold and were posted without any good faith intent to trade on them. *Two Roads*, ¶17; *LJM*, ¶12.

Defendants' conduct was successful, artificially elevating the implied volatility of the S&P 500 and the intra-day VIX. Defendants' pattern of flashed quotations also inflated the prices of SPX Options, options on S&P 500 Futures, and E-mini Futures, whose prices incorporate estimates of the S&P 500's implied volatility. *Two Roads*, ¶¶13-14, 53-57, 113-114; *LJM*, ¶¶6, 52-56, 118-120, 134-49. Indeed, on February 5, 2018, the VIX spiked 116% despite an S&P 500 dip of only 4.1% – an event whose probability of occurrence is 1×10^{-41} . *Two Roads*, ¶143; *LJM*, ¶149.

² All "LJM, ¶1," and "Two Roads, ¶1," references are to the LJM and Two Roads Complaints, respectively, unless stated otherwise.

As set forth in the three-step process mandated by this Court, Plaintiffs worked with their experts and provided Cboe a schedule containing over 87,000 SPX Option quotes flashed by Doe Defendants with the intent of increasing the intra-day VIX calculations on the afternoon of February 5 and morning of February 6, 2018, coinciding with the core periods of manipulation alleged in the Complaints.³ Having matched the Complaints' allegations to quotes by Firms 4, 5, 8, 12, and 16 to identify the "who" in the Complaints, Plaintiffs have shown good cause for this Court to order Cboe to unmask those firms so that Plaintiffs' claims may properly proceed.

I. PLAINTIFFS' COMPLAINTS AND PROCEDURAL HISTORY

LJM's and Two Roads' Complaints allege that Doe Defendants' SPX Option quotation activity manipulated the price of SPX Options, S&P 500 Futures, and E-mini Futures. Two Roads, ¶¶17-20, 32-34, 53-57, 78-80, 90, 118-35, 152-158; LJM, ¶¶12-14, 26-28, 52-56, 81-82, 98-99, 125-40. Defendants did so to increase estimates of implied volatility, including the VIX, and benefit their long volatility positions. *Id.*

Prices of SPX Options, options on S&P 500 Futures, and E-mini Futures have a high correlation with implied volatility as estimates of implied volatility are incorporated into formulae used by market participants to price options. Two Roads, ¶¶13-14; LJM, ¶119-20. As implied volatility is a component of options pricing, all else being equal, the premium charge for the same SPX Options, option on S&P 500 Futures, and/or E-mini Future (in terms of contract size, expiration, strike, etc.) will rise as S&P 500 implied volatility increases. Two Roads, ¶¶13-14, 20, 22, 53-57, 119, 124-26, 130-31; LJM, ¶¶6, 52-56, 118-120, 126, 130-34, 136-38. Thus, as implied

³ See Declaration of Patrick J. McGahan in Support of Motion to Identify Anonymous Doe Defendants by Plaintiffs LJM Partners, Ltd. and Two Roads Shared Trust filed herewith in Two Roads docket ("Decl."), Exs. 2-3. Unless otherwise indicated, all exhibits are attached to this declaration.

volatility rose in the afternoon of February 5 and the morning of February 6, 2018, LJM and Two Roads were harmed by the artificially high prices in the options on S&P 500 Futures and E-mini Futures they transacted and held. *Id.*; see also Two Roads, ¶¶8-9; LJM, ¶¶5, 139.

Doe Defendants' manipulative quotes targeted Cboe's intra-day VIX spot value, which is calculated every 15 seconds based on a snapshot of the quotes placed by Cboe-designated market-makers on certain out-of-the-money strikes on the near- and next-term SPX Options. Two Roads, ¶¶12-13, 58-70; LJM, ¶¶59-69. While Cboe captures this snapshot of SPX Option quotes roughly every 15 seconds to calculate the VIX spot value, it does not reveal the precise moment when it takes this snapshot. The VIX estimates the S&P 500's implied volatility by averaging the weighted bid-ask mid-point for each SPX Option strike included in its calculation. *Id.* The higher the midpoints of the included option strikes, the higher the VIX. Additionally, Cboe excludes all SPX Option series from the VIX that have zero bids (*i.e.*, they are not being quoted a positive price by a market-maker) and terminates the SPX Options string whenever two consecutive option strikes have zero bids. Two Roads, ¶¶68-69; LJM, ¶¶67-68. The longer the string of SPX Options included in the calculation, the higher the VIX. Two Roads, ¶¶68-69, 87; LJM, ¶¶67-68, 89.

Therefore, to increase the VIX calculation (and other estimates of implied volatility), market-makers can: a) extend the chain of out-of-the-money strikes included in the VIX calculation by posting quotes on otherwise zero-bid out-of-the-money strikes; and/or b) increase the bid/ask midpoints of the strikes that would already be included in the VIX calculation by posting higher quotes on those strikes.

As other Cboe market participants can accept those quotes, this behavior exposes market-makers to potential loss. Thus, a would-be manipulator could post and immediately cancel such a quote in a matter of milliseconds, before market participants could trade on it, but after it may have

been incorporated into the VIX calculation (and other estimates of implied volatility). Two Roads, ¶¶17, 89-90; LJM, ¶¶98-99. Again, this behavior is commonly referred to as “flashing” quotes. But because no market maker knows exactly when their flashes must be posted in to be included in the calculation, a would-be manipulator would also seek to repeatedly flash quotes on those zero-bid options to increase the likelihood that they would be caught by an intra-day VIX calculation. *Id.*

This is exactly what each Doe Defendant did on the afternoon of February 5 and morning of February 6, 2018. Doe Defendants took advantage of the decline in the S&P 500 and the fact, widely reported at the time, that several other market participants had large short volatility positions, to manipulate the intraday VIX upwards by repeatedly flashing quotes on out-of-the-money strikes eligible for inclusion in the VIX in the hope of benefitting from their long volatility strategies. Two Roads, ¶¶15-20, 32-34 n.6, 53-57, 78-80, 90, 118-35, 152-158; LJM, ¶¶12-14, 26-28, 52-56, 79-82, 98-99, 125-40.

SPX Options are traded anonymously, and Plaintiffs had no way to identify the unnamed Defendants without judicial intervention. Plaintiffs thus moved this Court to approve a three-step process for identifying the Doe Defendants. Dkt. 294 at 2. Those three steps are:

- (1) Cboe would produce SPX Option quotation records with consistent market-makers for aliases;
- (2) Plaintiffs would identify “prima facie manipulative quotations” based on the Complaints’ allegations; and
- (3) Cboe would reveal the real identities behind the masked trader aliases. *Id.* This Court approved this discovery plan while preserving Cboe’s right to contest Plaintiffs’ subpoena and unmasking request. Dkt. 294 at 2; Dkt. 311 at 4; *id.* Dkt. 327.

Once Plaintiffs analyzed Cboe's records in accordance with step (2), Plaintiffs asked Cboe to unmask the identities of Firms 4, 5, 8, 12, and 16 in an email sent January 8, 2021. Decl., Ex. 1.⁴

After meeting and conferring, on February 16, 2021, Plaintiffs sent Cboe another letter enclosing PDF and excel versions of a schedule containing 87,290 examples of Doe Defendants' flashed quotes on option strikes that were otherwise zero-bid on the afternoon of February 5, 2018, and the morning of February 6, 2018. Ex. 2 at 2; Ex. 3 (the "Schedule").⁵ Plaintiffs explained these Firms had "repeatedly posted, then withdrew in quick succession, quotes on out-of-the-money SPX Options strikes." Ex. 2 at 1 (citing Two Roads, ¶¶17–18, 33, 90, 118–34; LJM, ¶¶12–14, 27, 98–99, 125–39). Plaintiffs further explained that this "flashing" behavior occurred frequently "on SPX Option strikes that were otherwise zero-bid." *Id.* (citing Two Roads, ¶¶68–69; LJM, ¶¶67–68).

After receiving this letter, the parties continued to meet and confer, but Cboe ultimately maintained its objection to Plaintiffs' unmasking request. By its minute order dated May 9, 2021, granting Doe Defendants' motion to appear anonymously, the Court ordered Plaintiffs to move the Court to order unmasking by May 17, 2021. Two Roads Dkt. 41; LJM Dkt. 51

II. Argument

In its April 21, 2020 minute order, this Court held that Plaintiffs had shown "good cause" for their proposed "three-step process for identifying their Doe Defendants" pursuant to Fed. R. Civ. P. 26(d)(1). Dkt. 311 at 3. While the Court explained that "Plaintiffs should expect to point

⁴ This request superseded Plaintiffs' earlier request of November 5, 2020, which relied upon data previously provided by Cboe that contained inadvertent errors by Cboe. Two Roads Dkt. 28; LJM Dkt. 38 at 2.

⁵ The Schedule fields highlighted in orange reflect the Doe Defendants' placement of the quote recorded in each row, while the fields in green reflect the cancellation of those quotes. The time difference between the placement and cancellation of each quote, in milliseconds, is detailed in Column E (lifetime_ms). A field dictionary produced by Cboe appears at Ex. 7.

to specific allegations in their complaint when seeking to identify” the Doe Defendants, it later confirmed that “those comments should not be read to require litigation over the merits of plaintiff’s claims or to set an artificially high barrier to unmasking.” Two Roads Dkt. 41; LJM Dkt. 51.

Plaintiffs have met this burden. The zero-bid flashing activity of Firms 4, 5, 8, 12, and 16 highlighted in Plaintiffs’ Schedule matches the manipulative quotation of SPX Options squarely alleged in the Complaints. Cboe should be ordered to unmask those five identities.

A. Plaintiffs Performed Extensive Analysis to Identify Doe Defendants’ Manipulative Quotes

Plaintiffs reviewed Cboe’s production of authorized market-makers’ quotations on the near- and next-term SPX Option expirations that were eligible for inclusion in the VIX calculation on February 5 and 6, 2018. Employing experts, Plaintiffs sought to identify quoting behavior that was consistent with the manipulation alleged in their Complaints and inconsistent with normal market behavior.

Plaintiffs’ analysis focused on the two forms of “flashing” behavior discussed above, both of which increase estimates of implied volatility, including the intra-day VIX calculation. First, it looked at “flashing” activity on option strikes that were otherwise zero-bid (“zero-bid flashes”). As noted above, flashing quotes on otherwise zero-bid strikes can increase the length of the option chain included in the VIX calculation. All things being equal, extending the option chain increases the VIX calculation and implied volatility artificially, thereby increasing prices on options on S&P 500 Futures and E-minis traded by investors such as Two Roads and LJM.

To identify these zero-bid flashes, Plaintiffs employed experts to run a script across the quotes placed on out-of-the money put and call strikes that may have impacted the intra-day VIX on February 5 and 6, 2018. That script identified the following quoting pattern: a zero-bid option

strike, a flashed bid at five cents or higher, and the withdrawal of that quote within less than one second, thereby returning the option strike to zero-bid. *See* Ex. 2 and Ex. 4.

Plaintiffs also looked for flashed quotes on options with existing quotations, designed to raise the midpoints caught in the VIX calculation (“mid-point flashes”). To identify mid-point flashes on February 5 and 6, 2018, Plaintiffs and their experts identified options that had midpoints of greater than 50 cents and looked for instances where the midpoint increased by 50% or more and then, in less than a second, went back to its start or lower. The results of both analyses for the two relevant days are as follows:

February 5, 2018

During the period between 8:30 a.m. and 12:00 p.m.,⁶ a period where the intra-day spot VIX was comparatively stable, Plaintiffs identified relatively few instances of zero bid and mid-point flashes. However, between 12:00 p.m. and 3:15 p.m., when the VIX exploded upward, the volume of zero-bid and mid-point flashes increased sharply, occurring in many of the out-of-the-money SPX Option strikes continuously throughout that time.

Across February 5, 2018, Plaintiff identified 497 zero-bid flashes before 12:00 p.m. and 60,381 at or after 12:00 p.m. The five firms seeking to be unmasked were responsible for close to 95% of the 60,381 zero-bid flashes posted after 12 p.m.⁷ *See* Ex. 5 (collating Doe Defendants’ zero-bid flashes on the afternoon of February 5, 2018, into five-minute time slices). The prevalence of Doe Defendants’ zero-bid flashes from 12:00 p.m. onwards is consistent with Plaintiffs’ allegations (Two Roads, ¶¶118-125; LJM, ¶¶125-133) and the unprecedented rise in the VIX during this period, as illustrated by Figure 1 below (taken from Two Roads, ¶124):

⁶ All times are in Central Time unless otherwise stated.

⁷ Plaintiffs also identified 296 examples of mid-point flashes on February 5, 2018 (heavily weighted to the afternoon).

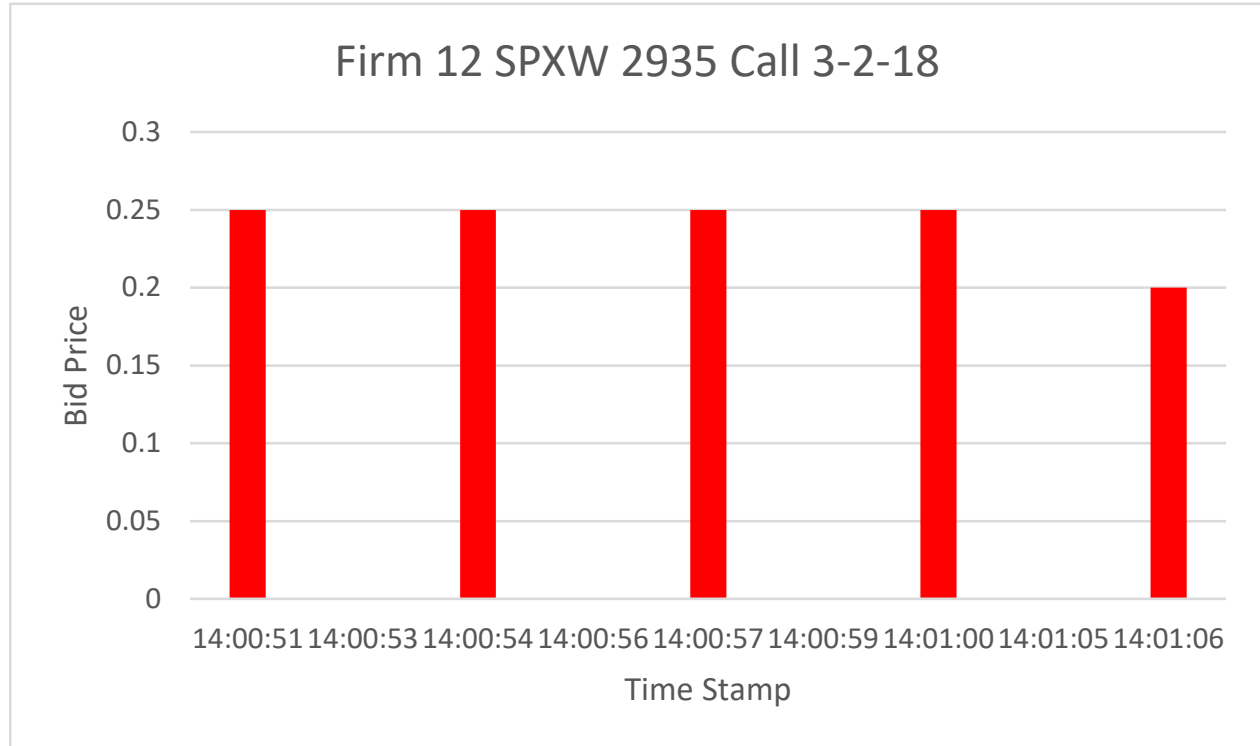
Figure 1. Intra-day spot VIX on February 5, 2018

The Schedule provided to Cboe includes Doe Defendants' zero-bid flashes across the afternoon of February 5, 2018. It shows how Firm 12 began its zero-bid flashing activity at 12:00 p.m., coinciding with the VIX's rapid ascent. The VIX then exploded beginning around 1:20 p.m., as Firms 4, 5, 8, and 16 began flashing quotes on zero-bid strikes as well. Ex. 5.

The Schedule also sets out a consistent repetition by each Doe Defendant of a zero-bid quote pattern across multiple out-of-the-money put and call strikes during the afternoon of February 5, 2018. Each Doe Defendant posted bid prices, then removed them in milliseconds, before quoting the same or substantially the same bid price again 4-15 seconds later, removing that quote again in a matter of milliseconds, before the process repeated itself. This pattern was not evident in the quote data in the morning of February 5, 2018.

This pattern is illustrated in Figure 2 below, showing Firm 12's quotes on an out-of-the-money call strike during the afternoon of February 5, 2018:

Figure 2. Firm 12 zero-bid flashed quotes on SPXW 2935 Call Option Expiring March 2, 2018



February 6, 2018

A similar quoting behavior pattern is seen in Defendants' flashed quotes during the morning of February 6, 2018. On that morning, Plaintiffs identified 28,344 zero-bid flashes between 7:40 a.m. and 10:50 a.m. and 2,382 at or after that time.⁸ Doe Defendants were responsible for over 98% of these pre-10:50 a.m. quotes. *See* Ex. 5.⁹ These flashes coincided with a period of rising VIX intra-day spot calculations:

⁸ The Cboe data produced to Plaintiffs did not capture after-hours quotations prior to 7:30 a.m.

⁹ Plaintiff also identified 100 examples of mid-point flashes on February 6, 2018 (heavily weighted to the morning).

Figure 3. Intra-day spot VIX on February 6, 2018¹⁰

See also Two Roads, ¶¶126-132 and LJM, ¶¶134-138 (alleging continued manipulation of the VIX in the morning of February 6, 2018).

Expert Analysis Revealed Further Indicia of Manipulation

In addition to identifying manipulative activity that matches Plaintiffs' allegations, the expert analysis showed that the Doe Defendants focused these flashed quotes on options series that would have had an outsized effect on the VIX calculation and other estimates of implied volatility. Doe Defendants' zero-bid flashes on put strikes across the afternoon of February 5, 2018, and morning of February 6, 2018, were concentrated on deeper out-of-the-money strikes. Ex. 5. Conversely, their zero-bid flashes during that same time focused on call strikes that were nearer to-the-money (albeit still out-of-the-money).

This is important. Because the option's strike price is squared and a denominator in the VIX calculation formula, the lower put and call strikes have a higher impact on the VIX calculation. Two Roads, ¶¶67 and LJM, ¶¶66, 164. Each Doe Defendant's decision to concentrate its zero-bid flashes on lower value zero-bid strikes in both put and call options is thus consistent

¹⁰ Taken from Two Roads, ¶130.

with its intent to inflate the VIX higher, and inconsistent with legitimate market behavior. If Defendants had a legitimate reason to trade those deep out-of-the-money puts (and thus quote them), one can reasonably expect they would have had a similar reason to offer, and then cancel, quotes on similarly out-of-the-money calls. The fact that they did not, and instead concentrated their flashes on those strikes which would most impact the VIX, suggests they did not have a legitimate trading rational. *See also* Two Roads, ¶87 and LJM, ¶89 (detailing Griffin paper’s finding that the same deep out-of-the-money puts were targeted in the manipulation of the related SOQ process).

B. Plaintiffs’ Analysis Provides Good Cause for Their Unmasking Request

Having matched the quoting activity of each Doe Defendant to the method of manipulation described in their Complaints, Plaintiffs have established good cause for this Court to order Cboe to unmask the identities of Firms 4, 5, 8, 12, and 16. Indeed, Plaintiffs’ Schedule details those firms placing 7,252, 3,185, 9,929, 17,832, and 46,538 zero-bid flashes, respectively, during the core manipulative periods on the afternoon of February 5, 2018, and the morning of February 6, 2018. *See* Ex. 3 and 5. Thus, disclosure of these firms’ identities does not risk an “inappropriate disclosure of innocent actors’ trading strategies.”. Dkt. 327 at 1. Indeed, at this point, any burden favors Plaintiffs, who are “ready to go but cannot move ahead without the name[s]” of these firms. Dkt. 311 at 3. Once Plaintiffs receive Doe Defendants’ names, they will promptly amend their Complaints, allowing Doe Defendants, and thus the Court, to properly test the sufficiency of their allegations at that time.

Conclusion

Good cause having been shown, Plaintiffs ask this Court to order Cboe to provide them with the identities of Firms 4, 5, 8, 12, and 16.

Dated: May 17, 2021

SCOTT+SCOTT ATTORNEYS AT LAW LLP

/s/ Patrick J. McGahan

Amanda F. Lawrence (*pro hac vice*)

Patrick J. McGahan (*pro hac vice*)

Michael P. Srodoski (*pro hac vice*)

156 South Main Street, P.O. Box 192

Colchester, CT 06415

Tel: 860-537-5537

Fax: 860-537-4432

alawrence@scott-scott.com

msrodoski@scott-scott.com

Christopher M. Burke (*pro hac vice*)

SCOTT+SCOTT ATTORNEYS AT LAW LLP

600 W. Broadway, Suite 3300

San Diego, CA 92101

Tel: 619-233-4565

Fax: 619-233-0508

cburke@scott-scott.com

Kristen M. Anderson (*pro hac vice*)

SCOTT+SCOTT ATTORNEYS AT LAW LLP

The Helmsley Building

230 Park Avenue, 17th Floor

New York, NY 10169

Tel: 212-223-6444

Fax: 212-223-6334

kanderson@scott-scott.com

Anthony F. Fata

Jennifer W. Sprengel

Kaitlin Naughton

CAFFERTY CLOBES MERIWETHER &

SPRENGEL, LLP

150 S. Wacker, Suite 3000

Chicago, IL 60606

Tel: 312-782-4880

Fax: 312-782-4485

afata@caffertyclobes.com

jsprengel@caffertyclobes.com

knaughton@caffertyclobes.com

Attorneys for Plaintiff Two Roads Shared Trust

/s/ Ryan Z. Cortazar

George A. Zelcs
Chad E. Bell
Randall P. Ewing, Jr.
Ryan Z. Cortazar
KOREIN TILLERY LLC
205 North Michigan Ave., Suite 1950
Chicago, IL 60601
Telephone: 312-641-9750
Facsimile: 312-641-9751
gzels@koreintillery.com
cbell@koreintillery.com
rewing@koreintillery.com
rcortazar@koreintillery.com

Michael E. Klenov
KOREIN TILLERY LLC
505 North 7th Street, Suite 3600
St. Louis, MO 63101
Telephone: 314-241-4844
Facsimile: 314-241-3525
mklenov@koreintillery.com

Attorneys for Plaintiff LJM Partners, Ltd.

CERTIFICATE OF SERVICE

I hereby certify that on the 17th of May, 2021, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will then send a notification of such filing to the registered participants as identified on the Notice of Electronic Filing.

/s/ Ryan Z. Cortazar

Ryan Z. Cortazar